AMENDMENTS TO THE CLAIMS

1. (Original) Process for recovery of the silica present in the separators located between the elements of lead-acid batteries, characterized in that it comprises the following operations:

a) washing the heavy plastics to remove the lead compounds and other foreign bodies,

b) separating the plastics from the washing solution,

c) lead recovery and regeneration of the washing solution,

d) rinsing of the plastics,

e) drying of the plastics,

f) separation of the granular plastics from the thin plastics (polyethylene with silica filler, PVC, fabrics) by drawing them up in a flow of air making use of the shape effect,

g) separation of the PVC and fabrics from the polyethylene with silica filler through fragmentation,

h) pyrolysis of the polyethylene with silica filler,

i) cracking of the pyrolysis gases and vapours in order to reduce their molecular weight and render them more suitable for handling and combustion to provide the heat necessary for pyrolysis,

j) oxidation of the pyrolysis residue to remove carbonaceous residues and recover the silica,

k) pyrolysis of the mixture of PVC and fabrics in the presence of alkaline substances,

l) oxidation of the residue from the pyrolysis of PVC and fabrics with the production of inert ashes.

2. (Original) Process according to claim 1, in which the heavy plastics are washed with an aqueous solution containing compounds capable of dissolving the lead (II) compounds and substances capable of reducing lead (IV) to lead (II) at a temperature between ambient temperature and the boiling point.

3. (Currently Amended) Process according to ~~any of the preceding claims~~ claim 1 in which the spent washing solution is regenerated by treating it with alkali metal or alkaline earth sulphides or by treating it with metals which are less noble than lead making use of the cementation reaction which replaces the lead in solution with cations of these metals.

4. (Currently Amended) Process according to ~~any of the preceding claims~~ claim 1 in which the granular plastics are separated from the thin plastics by drawing up in a flow of air making use of the shape effect.

5. (Currently Amended) Process according to ~~any of the preceding claims~~ claim 1 in which the polyethylene is separated from the PVC and fabrics by making use of the lesser brittleness of polyethylene in comparison with the other materials in a machine comprising a perforated cylinder in which numerous arms of rubber or other suitable material rotate scraping the inner surface of the cylinder.

6. (Currently Amended) Process according to ~~any of the preceding claims~~ claim 1 in which the polyethylene with quality silica filler is pyrolysed for a time of between 10 and 60 minutes, preferably between 20 and 45 minutes, at a temperature of between 300°C and 600°C, preferably between 470°C and 530°C, and in which the pyrolysis gases and vapours are caused to pass to a catalytic cracking reactor.

7. (Currently Amended) Process according to ~~any of the preceding claims~~ claim 1 in which the pyrolysis residue is oxidized under controlled temperature conditions between 400°C and 600°C, preferably between 450°C and 500°C, in the presence of a gaseous mixture comprising an inert gas and oxygen in a percentage of between 3% and 7%.

8. (New) Process according to claim 2 in which the spent washing solution is regenerated by treating it with alkali metal or alkaline earth sulphides or by treating it with metals which are less noble than lead making use of the cementation reaction which replaces the lead in solution with cations of these metals.

9. (New) Process according to claim 2 in which the granular plastics are separated from the thin plastics by drawing up in a flow of air making use of the shape effect.

10. (New) Process according to claim 3 in which the granular plastics are separated from the thin plastics by drawing up in a flow of air making use of the shape effect.

11. (New) Process according to claim 2 in which the polyethylene is separated from the PVC and fabrics by making use of the lesser brittleness of polyethylene in comparison with the other materials in a machine comprising a perforated cylinder in which numerous arms of rubber or other suitable material rotate scraping the inner surface of the cylinder.

12. (New) Process according to claim 3 in which the polyethylene is separated from the PVC and fabrics by making use of the lesser brittleness of polyethylene in comparison with the other materials in a machine comprising a perforated cylinder in which numerous arms of rubber or other suitable material rotate scraping the inner surface of the cylinder.

13. (New) Process according to claim 4 in which the polyethylene is separated from the PVC and fabrics by making use of the lesser brittleness of polyethylene in comparison with the other materials in a machine comprising a perforated cylinder in which numerous arms of rubber or other suitable material rotate scraping the inner surface of the cylinder.

14. (New) Process according to claim 2 in which the polyethylene with quality silica filler is pyrolysed for a time of between 10 and 60 minutes, preferably between 20 and 45 minutes, at a temperature of between 300°C and 600°C, preferably between 470°C and 530°C, and in which the pyrolysis gases and vapours are caused to pass to a catalytic cracking reactor.

15. (New) Process according to claim 3 in which the polyethylene with quality silica filler is pyrolysed for a time of between 10 and 60 minutes, preferably between 20 and 45 minutes, at a temperature of between 300°C and 600°C, preferably between 470°C and 530°C, and in which the pyrolysis gases and vapours are caused to pass to a catalytic cracking reactor.

16. (New) Process according to claim 4 in which the polyethylene with quality silica filler is pyrolysed for a time of between 10 and 60 minutes, preferably between 20 and 45 minutes, at a temperature of between 300°C and 600°C, preferably between 470°C and 530°C, and in which the pyrolysis gases and vapours are caused to pass to a catalytic cracking reactor.

17. (New) Process according to claim 5 in which the polyethylene with quality silica filler is pyrolysed for a time of between 10 and 60 minutes, preferably between 20 and 45 minutes, at a temperature of between 300°C and 600°C, preferably between 470°C and 530°C, and in which the pyrolysis gases and vapours are caused to pass to a catalytic cracking reactor.

18. (New) Process according to claim 2 in which the pyrolysis residue is oxidized under controlled temperature conditions between 400°C and 600°C, preferably between 450°C and 500°C, in the presence of a gaseous mixture comprising an inert gas and oxygen in a percentage of between 3% and 7%.

19. (New) Process according to claim 3 in which the pyrolysis residue is oxidized under controlled temperature conditions between 400°C and 600°C, preferably between 450°C and 500°C, in the presence of a gaseous mixture comprising an inert gas and oxygen in a percentage of between 3% and 7%.

20. (New) Process according to claim 4 in which the pyrolysis residue is oxidized under controlled temperature conditions between 400°C and 600°C, preferably between 450°C and 500°C, in the presence of a gaseous mixture comprising an inert gas and oxygen in a percentage of between 3% and 7%.